

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
Oliver BECK, *et al.*

Serial No.: 09/121,702

Filed: July 24, 1998

For: HEATING OR AIR CONDITIONING
SYSTEM FOR A MOTOR VEHICLE

Group Art Unit: 3743

Examiner: J. Ford

Attorney Docket No.: 16906/183

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Assistant Commissioner for Patents
Washington, D.C. 20231

Declaration under 37 CFR 1.132

I, Hans Kampf, declare that:

1. I am an engineer currently employed by Behr GmbH & Co. of Stuttgart, Germany ("Behr"), assignee of the above-identified patent application, and I have been employed by that company since 1981. During that time, I have been engaged in the design of automotive heating and air-conditioning systems, and I presently serve as the manager of development in the area of air conditioning for Behr.
2. I have read the patent application identified above as well as the Office Action mailed on April 11, 2001, in connection with that application.
3. In the Office Action, the U.S. PTO Examiner has taken the position that the above-identified patent application does not provide descriptive support for the language inserted into the claims of the application that states: "the quantity . . . of air fed to each of the four associated heating/air-conditioning zones is independently controllable with respect to each other zone." It is my opinion that the disclosure of the subject patent application does, in fact, provide a supporting description from which a person of ordinary skill in this field of art at the time of filing this application would have understood that the described air-conditioning system does, in fact, enable the quantity of air fed to each of the four zones to be independently controllable with respect to the other zones. For example, the disclosure on pages 4-6 of the original

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application describes the preferred embodiment in detail. Beginning on line 15 of page 4, it states that "each of the four cold-air ducts then obtained opens out in each case into one mixing space (50, 52, 54, 56)." Beginning at line 32 of that page, it is stated that, if "each mixing space is assigned at least two of the air-stream control elements, of which one is provided as a cold-air flap in the cold-air duct and a second is designed as a warm-air control element arranged directly on the outlet side of the heater, it is possible for the cold-air stream and the warm-air stream to be regulated separately from one another." At lines 18-19 of page 5 it is also noted that "each mixing space can also be fed cold air in a separately adjustable manner." The following disclosure through page 6 makes it clear that the cold air ducts can be "closed off" (page 6, line 22) with air flaps 30 and 32, and also that the warm-air control elements, i.e., lamellae 44, in their closed position, "cover" (page 6, line 29) one of the respective sub-regions of the heater 18. With these two types of control for the quantity of cold air and heated air, that allow the air to flow or to be shut off, a person skilled in the art understands that the volume of air fed into each of the four zones can be controlled independently of the volume of air supplied to each the other zones. This feature is disclosed in the subject application, as it would be understood by a person of ordinary skill in the art, and as will be discussed below, represents an important and advantageous feature of the invention described in the application.

4. In the Office Action, on pages 4 and 5, the Examiner has taken a position with respect to the state of the prior art that I believe to be factually erroneous. In the Office Action it is stated:

"It is submitted that what has changed in the automotive art in the last two decades is the size of automobiles. The average size car in 1998 is much smaller than the average size car in 1988. This has forced car makers to reduce the size of components. Smaller sizes are driving the automotive industry and its suppliers to look for smaller solutions to problems. In the luxury car market (Mercedes, Lexus, BMW etc.), where relatively expensive four-zone heating and cooling systems are, no doubt, to be first deployed, the need for compact packaging of the air-conditioner/heater was much greater at the time this application was filed than in the past." (underlining added)

in the respective mixing space each of the two cold-air ducts is divided in two.

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5. In my experience, the most significant downsizing of automobiles took place in the 1970's and the early 1980's, in response to extreme pressure to reduce the weight of vehicles and to thereby improve their fuel economy. In addition, during this same period of time, the competition for the decreasingly available space for vehicle heating/air-conditioning equipment was increasing, for example, due to the installation of passenger-side air bags and the market-demanded equipping of most vehicles with enhanced audio equipment, including a tape deck. In fact, contrary to the position taken by the PTO, relatively recently there has been a slight tendency for actually upsizing many models of cars, particularly the more expensive models of cars.
6. Therefore, in my opinion, there was already a particularly strong motivation to seek compact automotive heating/air-conditioning systems at the time that the two prior art documents being relied upon to reject the claims of this application were published, i.e., JP-U 58-136813, published September 14, 1983, and DE-A 35 14 359, published October 23, 1986 (of which I am one of the inventors). The motivations to provide a compact heating/air-conditioning system offering the important advantage of independent control of both the temperature and the volume of air to four independent zones were equally as strong in the mid-1980's as they were in 1997, when the priority document of the present application was filed. It is not as though the idea of four-zone independent control of air temperature and air volume is new. On the contrary, this has always been recognized as the ultimately desired goal. The challenge for the designer was to provide an efficient and space-saving arrangement that could provide the desired system within the available space in the vehicle.
7. The design of the presently claimed invention in this patent application was not "obvious" to those of us, persons of ordinary skill in the art, in the period of 1986 to 1997, even though we had the same pieces of prior art information in front of us as the Examiner is relying on to make a rejection of the claims as allegedly "obvious". In my opinion, the existence of this prior art information to persons in the field, coupled with a failure to invent the presently claimed design until 1997, and particularly in

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light of the significant advantages resulting from the present invention, is evidence that the invention claimed in this application was, in fact, "non-obvious" to persons of ordinary skill in the art at the time the invention was made. None of the prior art references being relied upon to reject the invention as allegedly obvious enables the independent control of both the quantity and the temperature of the air supplied to the four zones, and the failure of the prior art to provide for this feature that was clearly recognized as desirable and advantageous in the mid 1980's represents, in my opinion, objective evidence that the presently claimed invention was not obvious to persons of ordinary skill in the art when it was made.

8. It should be recognized that the design of a compact system that permits independent control of air temperature to four separate zones within a vehicle passenger compartment involves the reconciliation of two mutually contradictory considerations, namely, the trade-off between compactness and the ability to achieve thorough mixing (in a necessarily small mixing chamber) of warm and cold air, in order to overcome the problem of non-uniform temperature air streams, as discussed in the paragraph bridging pages 1 and 2 of the above-identified application. According to the preferred embodiment of the invention disclosed in this application and claimed in claims 12-14, not only can the mixing chambers be made more compact by using the louvered warm-air control elements, but with the claimed orientation of the louvers to direct warm-air toward the cold-air, it is possible to obtain an unexpectedly sufficient degree to mixing to overcome the problem of non-uniform air temperature streams exiting from the mixing chambers. Providing this advantage and overcoming the recognized problem in a way not previously taught in the automotive air-conditioning art should also be considered as objective evidence tending to show that the claimed invention would not have been obvious to a person of ordinary skill in the art at the time that the present invention was made.

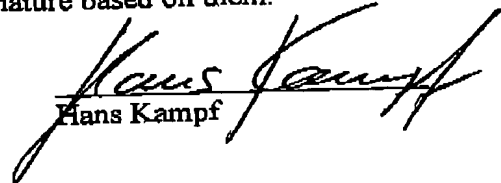
I further declare that all statements made in this declaration of my own knowledge are true and that all statements made on information and belief are believed to be true; and further, that these statements were made with the knowledge that willful, false

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statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful, false statements may jeopardize the validity of legal decisions of any nature based on them.

Date: 07.08.2001


Hans Kampf